Strong Teachers, Silent Learners?

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Abstract

This study aims to empirically validate the construct validity of teaching and learning quality based on Standard 4 of the Malaysian Education Quality Standard Wave 2 (MEQSw2) within the context of secondary schools in Sabah, Malaysia. A quantitative research design was employed, involving data collected from 440 secondary school teachers across urban, semi-urban, and rural schools. The measurement model was analysed using Confirmatory Factor Analysis (CFA) with AMOS to examine the validity and internal consistency of six latent constructs: teacher as planner, controller, mentor, motivator, assessor, and student as active learner. The CFA results indicated an acceptable measurement model, with all standardised factor loadings exceeding the minimum threshold of 0.60. Teacher-related constructs demonstrated strong loadings, particularly teacher as controller (0.914–0.975), teacher as motivator (0.733–0.982), teacher as planner (0.623–0.962), and teacher as assessor (0.762–0.865). The teacher as mentor construct also showed satisfactory loadings (0.609–0.977), though interdisciplinary integration emerged as a weaker indicator. In contrast, the student as active learner construct recorded comparatively lower factor loadings (0.609–0.794), indicating limited learner autonomy, problem-solving involvement, and real-world application of learning. Interpreted through a constructivist perspective, these findings reveal a pedagogical imbalance between strong teacher competence and constrained learner agency, particularly in resource-limited school contexts. This study contributes empirical evidence by validating policy-defined teaching quality constructs within a geographically marginalised setting and underscores the need for targeted professional development and context-sensitive instructional support to strengthen constructivist pedagogy in secondary education.

Keywords: *Teaching and learning quality; Constructivist theory; Teacher roles; Student active learning*

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1. Introduction

In the rapidly evolving landscape of 21st-century education, teachers play a pivotal role not merely as transmitters of knowledge but as facilitators and designers of meaningful learning experiences. Contemporary educational paradigms emphasise the transformation of teaching practices to meet the demands of a technology-driven and increasingly complex global society. Teachers are now expected to move beyond content delivery to cultivate students' creativity, collaboration, communication, and critical thinking—collectively referred to as the 4Cs—which are essential for navigating both academic challenges and real-world problem-solving contexts (Manuel, 2025; Khairunisa & Aqida, 2023; Larson & Clark, 2022). This shift reflects a broader reorientation of education towards learner-centred and skills-based outcomes.

To effectively foster these competencies, teachers must possess a comprehensive and adaptable skill set that integrates digital literacy, cultural responsiveness, and pedagogical flexibility. Empirical studies indicate that technology-enriched professional training is crucial in equipping teachers with the competencies needed to design inclusive, engaging, and cognitively stimulating learning environments (Manuel, 2025; Azarcon-Sanchez et al., 2024). The integration of digital tools into instructional planning has been shown to enhance student engagement and bridge the gap between technological innovation and academic achievement (Олендра, 2023; Chaerani et al., 2024). Furthermore, culturally responsive teaching practices are increasingly recognised as fundamental to effective instruction, as they ensure that curricula acknowledge and reflect students' diverse cultural and social backgrounds (Vonti et al., 2025; Weeks et al., 2020).

In parallel, the teacher's role has expanded to include the facilitation of collaborative learning processes. Collaborative pedagogies not only strengthen students' communication and interpersonal skills but also foster a sense of shared responsibility and community within the classroom (Njoroge & Nekesa, 2025; Hapsari & Prasetyarini, 2025; Weeks et al., 2020). Consequently, teachers are encouraged to adopt innovative instructional approaches such as project-based learning, peer collaboration, and reflective practices, all of which promote higher-order thinking and problem-solving abilities (Rizaldi et al., 2020; Maulidya et al., 2025; Vonti et al., 2025). These pedagogical shifts underscore the importance of teacher education programmes that systematically develop these competencies among prospective educators, ensuring their readiness to navigate the complexities of contemporary classroom environments (Khairunisa & Aqida, 2023; Escobar, 2023).

As educational systems increasingly prioritise inclusivity and collaborative learning cultures, teachers assume a critical role in shaping learners who are capable of thriving in a globalised society (Anderson & Shattuck, 2012; Nasrudin et al., 2025). Sustained professional development and a commitment to lifelong learning enable teachers to respond effectively to the evolving demands of modern education, thereby enhancing student learning outcomes and preparing learners for future academic, professional, and societal challenges (Sari, 2021; Lawrence et al., 2021; Ratama et al., 2021).

2. Literature Review

2.1 Teaching and Learning Quality in Sabah: Structural Constraints and Theoretical Implications

The quality of teaching and learning in Sabah's secondary schools has been persistently shaped by structural, geographical, and systemic constraints. Existing studies highlight disparities in digital infrastructure, uneven access to learning resources, and teacher workload pressures, particularly in rural and remote areas (Chinyere, 2021; Yusoff et al., 2022). While these challenges intensified during the COVID-19 pandemic due to the abrupt shift to online and hybrid learning modalities, evidence suggests that such inequalities predated the pandemic and reflect deeper systemic issues within the education ecosystem.

From a constructivist perspective, meaningful learning requires sustained interaction, scaffolding, and contextualised engagement between teachers and learners (Vygotsky, 1978). However, when instructional environments are constrained by limited resources and technological access, opportunities for active knowledge construction are significantly reduced. In this regard, Sabah presents a theoretically significant context: it illustrates how structural inequities can limit the enactment of constructivist pedagogy, thereby affecting learning quality beyond mere content delivery.

Although prior research has documented these challenges, much of the literature remains descriptive, focusing on infrastructural deficits rather than examining how such constraints mediate teachers' pedagogical roles and instructional practices. This gap underscores the need for empirical studies that move beyond contextual description to interrogate how teaching quality constructs operate within constrained educational environments.

2.2 Constructivism and Teacher Quality: Conceptualising Teaching Beyond Transmission

Constructivist learning theory positions learners as active agents who construct knowledge through interaction, reflection, and social mediation (Piaget, 1970; Vygotsky, 1978). Within this framework, teachers function not as transmitters of information but as facilitators, mentors, and designers of learning experiences. Contemporary teacher quality discourse increasingly aligns with this paradigm, emphasising active learning, formative assessment, and learner autonomy.

In the Malaysian context, this theoretical orientation is institutionalised through the Malaysian Education Quality Standard Wave 2 (MEQSw2), which conceptualises teaching quality through six interrelated roles: planner, mentor, controller, assessor, motivator, and facilitator of active learning (KPM, 2017). These roles reflect constructivist assumptions about teaching as a multidimensional and interactive process. However, the extent to which these roles function as coherent, empirically distinct constructs—particularly in non-ideal contexts such as Sabah—remains underexplored.

Existing studies tend to treat these roles as normative expectations rather than empirically testable dimensions of teaching quality. Consequently, there is limited evidence validating whether these constructs are perceived and enacted consistently by teachers in practice, highlighting a significant conceptual and methodological gap in the literature.

2.3 Instructional Planning and Scaffolding in Resource-Constrained Contexts

Effective instructional planning is central to constructivist pedagogy, as it enables teachers to design learning experiences that scaffold students' cognitive development and align instructional objectives with learners' prior knowledge. Empirical evidence

indicates that weak lesson planning—particularly the absence of clear learning objectives and alignment with assessment—negatively affects instructional coherence and student outcomes (Fitriani & Budiarta, 2021).

In Sabah, instructional planning is further complicated by contextual realities, including multi-grade classrooms, limited instructional materials, and diverse learner readiness levels. While MEQSw2 emphasises planning as a core teacher role, existing studies rarely examine how this role is enacted under such constraints or how it interacts with other pedagogical functions, such as assessment and motivation.

This omission limits the explanatory power of existing research and underscores the need for a more nuanced, construct-level examination of instructional planning as part of a broader teaching quality framework.

2.4 Teachers as Mentors: Constructivist Mediation and Holistic Development

Mentorship is a central constructivist function of teaching, as teachers mediate learning by connecting academic content to learners' social and real-life experiences. Studies indicate that effective mentoring supports students' cognitive, emotional, and social development (Sever & Ersoy, 2019; Yeni et al., 2021). However, evidence from rural and semi-rural contexts suggests that mentoring practices are often constrained by time limitations, insufficient professional training, and lack of institutional support (Nordin et al., 2021).

In Sabah, mentoring tends to be narrowly framed around academic monitoring rather than holistic learner development. This reflects a broader tension between policy expectations and classroom realities. While MEQSw2 formally recognises mentoring as a teacher role, empirical validation of this construct—particularly its boundaries and relationship to other pedagogical roles—remains limited.

Thus, there is a clear need to empirically examine mentoring as a latent construct within teaching quality models, especially in contexts where constructivist mediation is structurally constrained.

2.5 Classroom Management, Assessment Literacy, and Learning Environments

Constructivist learning environments require structured yet flexible classroom management practices that support interaction, inquiry, and formative assessment. Teachers' ability to regulate learning environments and assess student progress meaningfully is therefore critical. Research indicates that strong classroom management and assessment literacy enable teachers to adapt instruction responsively and sustain student engagement, even in resource-limited settings (Umam & Indah, 2020).

However, in Sabah, infrastructural limitations, overcrowded classrooms, and high teacher workloads pose challenges to effective classroom control and assessment implementation (Octavia et al., 2022; Hayashi et al., 2022). While existing studies acknowledge these constraints, few investigate how teachers integrate assessment and classroom management as part of a coherent pedagogical practice.

This gap highlights the need for empirical models that treat classroom control and assessment not as isolated competencies but as interconnected dimensions of teaching quality within a constructivist framework.

2.6 Motivation, Active Learning, and Pedagogical Transformation

Motivation and active learning are foundational to constructivist pedagogy, as they promote learner agency and deeper cognitive engagement. Despite policy emphasis on student-centred learning, evidence suggests that traditional teacher-centred practices remain prevalent in Sabah (KPM, 2018). Such practices limit opportunities for inquiry, collaboration, and higher-order thinking.

Recent studies advocate for experiential learning, ICT integration, and interactive instructional strategies to enhance student motivation and engagement (Wardoyo et al., 2021; Humaeroah et al., 2023). However, much of this literature focuses on intervention outcomes rather than examining teachers' readiness and capacity to enact these roles as part of their professional practice.

This limitation underscores the need for construct-level validation of motivation and facilitation roles within teaching quality frameworks, particularly in contexts undergoing pedagogical transition.

2.7 Teacher Professionalism, Teaching Quality, and Student Achievement: A Critical Gap

National examination data reveal that Sabah has historically underperformed relative to other Malaysian states, despite incremental improvements in recent years (KPM, 2018). While prior research links teacher professionalism and instructional competence to student achievement (George Jette & Mohd Hamzah, 2020), most studies adopt outcome-oriented or correlational approaches without interrogating the internal structure of teaching quality constructs.

Critically, there is limited empirical evidence validating whether policy-defined teacher roles under MEQSw2 function as distinct yet interrelated dimensions of teaching quality, particularly within constrained educational contexts such as Sabah. This represents a significant gap in both the Malaysian and international literature, as construct validity is a prerequisite for meaningful measurement, comparison, and intervention.

2.8 Research Gap and Contribution

In summary, existing literature establishes the importance of teaching quality, constructivist pedagogy, and teacher professionalism in enhancing student learning outcomes. However, three critical gaps remain:

1. **A lack of empirical validation of policy-defined teaching quality constructs**, particularly within resource-constrained contexts.

2. **Limited integration of constructivist theory with measurement models** of teaching quality.

3. **Insufficient context-sensitive evidence from Sabah**, despite its structural and pedagogical significance.

By empirically validating the multidimensional structure of teaching quality aligned with MEQSw2 through Confirmatory Factor Analysis, this study contributes to the literature by bridging theory, policy, and practice. It extends constructivist teacher quality discourse beyond normative frameworks, offering empirically grounded insights that inform teacher development, policy implementation, and instructional improvement in comparable educational contexts.

2.9 Research Objective

To empirically validate a constructivist-informed model of teaching and learning quality based on teacher roles outlined in the Malaysian Education Quality Standard Wave 2 (MEQSw2) within the context of secondary schools in Sabah.

A. Specific Objectives

1. To examine the factorial validity of teacher role constructs—namely planning, mentoring, classroom management, assessment, motivation, and facilitation of active learning—using Confirmatory Factor Analysis (CFA).

2. To determine the extent to which constructivist-oriented teacher practices underpin the quality of teaching and learning in secondary schools.

3. Methodology

3.1 Research Design and Context

The present study adopted a quantitative research design to examine the quality of teaching and learning practices among secondary school teachers in Sabah, Malaysia. This design was selected to facilitate the systematic collection of numerical data and the application of advanced statistical techniques, particularly Confirmatory Factor Analysis (CFA) using AMOS, to validate the underlying constructs of teaching quality based on Standard 4 of the Malaysian Education Quality Standard Wave 2 (MEQSw2).

The research was conducted in daily secondary schools throughout Sabah, involving approximately 200 schools administered by 24 District Education Offices *(Pejabat Pendidikan Daerah, PPD).* These schools are geographically distributed across six administrative divisions, namely the Southeastern, Sandakan, Northern, Western, Interior, and Southern divisions. The wide geographical coverage ensured that the sample adequately represented the diverse educational contexts of Sabah, including urban, semi-urban, and rural settings.

By employing AMOS for CFA, the study was able to rigorously test the measurement model and examine the validity and reliability of the teaching and learning quality constructs. This approach strengthened the methodological rigor of the study and ensured that the analysis accurately reflected the multidimensional nature of instructional practices among secondary school teachers in Sabah.

3.2 Sampling Procedures

A total of 440 teachers participated in the study. To ensure representativeness, the study utilized a combination of three probability sampling techniques. First, stratified random sampling was used to classify schools according to district. Second, cluster random sampling was employed to select schools within each district. Finally, simple random sampling was applied to select approximately 40% of the teachers from each chosen school. This multi-stage sampling approach enhanced the validity and generalizability of the findings.

3.3 Research Instrument

The instrument for data collection was adapted from the Malaysian Education Quality Standard Wave 2 (MEQSw2) developed by the Ministry of Education Malaysia (2017), specifically focusing on Standard 4: Teaching and Learning. This standard emphasizes teachers' roles as facilitators who promote holistic student development and continuous learning. The items were reviewed and contextualized to align with the objectives of this study and to reflect the realities of Malaysian secondary education.

3.4 Data Collection and Analysis

Data were collected through structured questionnaires administered to the sampled secondary school teachers. All responses were coded and screened prior to analysis to ensure accuracy and completeness. Descriptive statistical analyses were first conducted using the **Statistical Package for the Social Sciences (SPSS) version 23** to summarize respondent characteristics and examine overall patterns in teaching and learning practices.

Subsequently, Confirmatory Factor Analysis (CFA) was performed using AMOS version 23 to validate the measurement model of teaching and learning quality based on Standard 4 of the Malaysian Education Quality Standard Wave 2 (MEQSw2). The CFA analysis assessed factor loadings, construct validity, and internal consistency to ensure the reliability of the proposed model. Inferential analyses were then employed to examine relationships among the validated constructs, providing a robust empirical basis for interpreting teaching practices and quality indicators.

3.5 Application of the MEQSw2 Framework

The MEQSw2 framework served as an operational reference for evaluating teaching quality, identifying strengths and weaknesses, and planning professional development initiatives such as Professional Learning Communities (PLC) and in-service training programs (LDP). The analysis of Standard 4 provided insights into areas of pedagogical improvement, including classroom management, ICT integration, creativity, and innovation in instruction.

Furthermore, the analyzed results supported school leaders in conducting Learning Walks and designing targeted professional growth programs. While global quality assurance frameworks offer valuable perspectives, their direct adoption in Malaysia may not account for contextual and cultural factors. Therefore, the adaptation of MEQSw2 reflects the need for a culturally responsive and context-specific quality management system to strengthen educational excellence in Malaysia.

4. Discussion of Findings

4.1 Confirmatory Factor Analysis (CFA) Results for Teaching and Learning Quality

Based on table 4.2, Confirmatory Factor Analysis (CFA) was conducted using AMOS to examine the construct validity of teaching and learning quality based on Standard 4 of MEQSw2. The analysis involved responses from 440 secondary school teachers across Sabah. All constructs recorded standardized factor loadings above the minimum acceptable threshold of 0.60, indicating satisfactory convergent validity and reliability of the measurement model.

For the Teacher as Planner construct, factor loadings ranged from 0.623 to 0.962, with the highest loading associated with determining assessment methods aligned with curriculum requirements. This indicates strong procedural and curriculum compliance among teachers. However, the comparatively lower loading for preparing teaching aids according to students' ability levels suggests limitations in differentiated instructional planning.

The Teacher as Controller construct recorded exceptionally high factor loadings, ranging from 0.914 to 0.975, reflecting teachers' strong capability in managing instructional processes, classroom behaviour, time allocation, communication, and learning

environments. These results confirm that classroom control and organization are among the strongest professional competencies of teachers in Sabah.

For the Teacher as Mentor construct, factor loadings ranged between 0.609 and 0.977. While teachers demonstrate strong capability in guiding skills development and decision-making, the lowest loading was observed for cross-disciplinary integration. This indicates that mentoring practices are largely instructional rather than holistic or interdisciplinary.

The Teacher as Motivator construct showed consistently high factor loadings (0.733 to 0.982), particularly in encouraging questioning, communication, leadership opportunities, and critical thinking. These findings highlight teachers' strong affective and motivational influence on students.

In the Teacher as Assessor construct, factor loadings ranged from 0.762 to 0.865, confirming reliable implementation of assessment activities. However, repeated reflective assessment items with similar loadings suggest procedural repetition rather than formative depth.

Finally, the Student as Active Learner construct recorded the lowest factor loadings overall (0.609 to 0.794). Items related to real-world application and problem-solving involvement showed comparatively weaker loadings, confirming that student-centered and inquiry-based learning remains underdeveloped despite strong teacher control and motivation.

Table 4.1 Standardized Factor Loadings of Teaching and Learning Quality Constructs

Construct	Range of Factor Loadings	Strongest Indicator	Weakest Indicator	Interpretation
Teacher as Planner	0.623 – 0.962	Curriculum-aligned assessment	Differentiated teaching aids	Strong planning, limited differentiation
Teacher as Controller	0.914 – 0.975	Time & activity management	Active participation control	Very strong classroom control
Teacher as Mentor	0.609 – 0.977	Skills mastery guidance	Cross-disciplinary integration	Mentoring conceptually present but weakly enacted
Teacher as Motivator	0.733 – 0.982	Questioning & communication	Collaborative engagement	Strong affective & motivational role
Teacher as Assessor	0.762 – 0.865	Task-based assessment	Reflective assessment	Reliable but procedural assessment
Student as Active Learner	0.609 – 0.794	Overall participation	Problem-solving & real-world application	Weak learner autonomy

Note: All factor loadings exceed the minimum threshold of 0.60, confirming acceptable convergent validity.

5. Discussion

This study examined the construct validity of Teaching and Learning Quality based on Standard 4 of MEQSw2 through Confirmatory Factor Analysis (CFA). While the results demonstrate strong psychometric adequacy across all constructs, a deeper interpretation grounded in constructivist teaching theory reveals a significant pedagogical imbalance between teacher competence and learner agency. The findings suggest that teaching quality in the studied context is characterised by procedural robustness and instructional control rather than by epistemic engagement and active knowledge construction.

5.1 Teacher Control and the Persistence of Instructional Authority

The exceptionally high factor loadings for the Teacher as Controller construct indicate that classroom management, behavioural regulation, and instructional organisation are deeply entrenched professional practices. Although structured classroom environments are necessary for effective teaching, constructivist theory cautions against excessive instructional control, as learning is understood to emerge through learners' active participation, social interaction, and meaning-making processes (Vygotsky, 1978; Lave & Wenger, 2020).

The dominance of this construct suggests that teachers retain strong epistemic authority over knowledge transmission, limiting opportunities for students to engage in inquiry, negotiation, and problem-solving. This finding aligns with international research showing that accountability-driven education systems often prioritise order, efficiency, and curriculum coverage at the expense of learner autonomy (Biesta, 2020; OECD, 2021). From a teacher education perspective, this raises concerns about the extent to which constructivist pedagogies are meaningfully enacted rather than symbolically endorsed.

5.2 Planning as Curriculum Alignment Rather Than Adaptive Design

The Teacher as Planner construct exhibited strong loadings related to curriculum-aligned assessment planning, reflecting teachers' high levels of procedural competence. However, the comparatively weaker loading for differentiated instructional materials indicates that planning practices remain largely standardised. Constructivist pedagogy conceptualises planning as an adaptive design process that builds on learners' prior knowledge and developmental readiness (Darling-Hammond et al., 2020).

The findings suggest that lesson planning is enacted primarily as compliance with curricular and assessment requirements rather than as a pedagogical tool for scaffolding diverse learners. This pattern mirrors concerns in teacher education literature that technocratic approaches to teaching reduce professional judgment and constrain teachers' capacity to design responsive learning experiences (Cochran-Smith et al., 2020; Fives & Gill, 2022).

5.3 Mentoring Without Interdisciplinary Knowledge Integration

The Teacher as Mentor construct demonstrates strong instructional guidance within subject domains, yet the weak loading for cross-disciplinary integration highlights a narrow enactment of mentoring. Constructivist and sociocultural theories position mentoring as a dialogic process that supports learners in integrating knowledge across contexts and disciplines (Lave & Wenger, 2020).

The limited interdisciplinary emphasis suggests that mentoring practices are focused on task completion and skill mastery rather than on fostering holistic understanding. This finding reflects a broader challenge in teacher education, where mentoring is often framed as academic support rather than as facilitation of epistemic growth and transferability of learning (Hmelo-Silver et al., 2021).

5.4 Motivation as Affective Engagement Rather Than Cognitive Ownership

The consistently high factor loadings for the Teacher as Motivator construct indicate that teachers are highly effective in fostering encouragement, communication, and positive classroom relationships. A supportive affective climate is widely recognised as a prerequisite for engagement (Darling-Hammond et al., 2020). However, constructivist theory distinguishes between emotional engagement and cognitive ownership of learning.

The findings suggest that motivation functions primarily as affective reinforcement rather than as a mechanism for challenging students intellectually through authentic, ill-structured problems. Research has shown that while motivation enhances participation, deep learning requires learners to actively grapple with conceptual uncertainty and complexity (Hmelo-Silver et al., 2021; Kirschner et al., 2020). This highlights a pedagogical paradox in which students are encouraged but not sufficiently empowered.

5.5 Assessment as Procedural Consistency Rather Than Formative Learning

The Teacher as Assessor construct confirms reliable implementation of assessment practices; however, the similarity in reflective assessment loadings suggests procedural repetition rather than formative depth. Constructivist assessment frameworks emphasise assessment as an ongoing process that supports metacognition, self-regulation, and instructional adaptation (Black & Wiliam, 2023).

The findings indicate that assessment practices are systematically conducted but may not be fully leveraged to inform teaching decisions or support learner reflection. This reinforces critiques in teacher education research that assessment-for-accountability often overshadows assessment-for-learning, even within reform-oriented policy contexts (Biesta, 2020).

5.6 Marginalisation of the Active Learner

Most critically, the Student as Active Learner construct recorded the weakest factor loadings, particularly in real-world application and problem-solving. This finding represents a direct contradiction to constructivist assumptions that learners actively construct knowledge through authentic engagement with meaningful tasks (Vygotsky, 1978; Hmelo-Silver et al., 2021).

Despite strong teacher competencies in planning, control, motivation, and assessment, the limited enactment of learner autonomy suggests a structural disconnect between teacher practices and student learning experiences. Similar patterns have been reported in contexts where learner-centred reforms are adopted rhetorically but remain constrained by entrenched instructional norms (Schweisfurth, 2021).

6. Implications

6.1 Implications for Teacher Education

The findings of this study carry significant implications for teacher education, particularly in contexts where teaching quality is evaluated through standards-based frameworks. While the results demonstrate strong teacher competencies in planning, control, motivation, and assessment, the comparatively weak enactment of learner agency indicates that technical proficiency alone is insufficient to realise constructivist learning. Teacher education programmes must therefore move beyond an emphasis on procedural compliance and instructional efficiency towards cultivating teachers' epistemic beliefs about learning and knowledge construction (Fives & Gill, 2022).

Initial teacher education and in-service professional development should explicitly foreground constructivist pedagogies that position students as active participants in meaning-making processes. This includes sustained engagement with inquiry-based learning, problem-based learning, and authentic assessment practices that require teachers to relinquish partial instructional control in favour of cognitive autonomy (Hmelo-Silver et al., 2021). Without deliberate attention to these pedagogical shifts, constructivist principles risk remaining aspirational rather than enacted.

Furthermore, mentoring practices in teacher education should be reconceptualised to emphasise interdisciplinary integration and real-world application. As constructivist theory highlights the importance of knowledge transfer across contexts, teacher preparation programmes should equip educators with the capacity to design learning experiences that transcend subject silos and promote holistic understanding (Lave & Wenger, 2020).

6.2 Implications for Professional Development and School Leadership

The dominance of classroom control and procedural assessment observed in this study suggests a need for school-based professional development that challenges entrenched instructional norms. Professional learning communities should prioritise reflective inquiry into teaching practices, enabling teachers to critically examine the balance between structure and learner autonomy (Darling-Hammond et al., 2020).

School leaders play a critical role in shaping pedagogical cultures. Leadership practices that emphasise compliance and documentation may unintentionally reinforce teacher-centred instruction. Conversely, instructional leadership that values experimentation, reflective dialogue, and pedagogical risk-taking can create conditions conducive to constructivist learning (Biesta, 2020). School leaders should therefore align performance evaluation and professional learning with pedagogical quality indicators that foreground student engagement, inquiry, and epistemic participation.

6.3 Implications for Policy and Quality Assurance Frameworks

At the policy level, the findings raise important questions about the operationalisation of teaching quality within standards-based evaluation systems such as MEQSw2. While such frameworks successfully institutionalise teacher competencies, they may insufficiently capture the quality of student learning experiences. Policymakers should consider recalibrating quality indicators to move beyond observable teacher behaviours towards measures that reflect learner agency, problem-solving, and authentic engagement (OECD, 2021).

Incorporating student-centred indicators into quality assurance frameworks would align evaluation practices more closely with constructivist principles and contemporary educational goals. Without such recalibration, improvements in teacher performance may continue to yield limited gains in learner autonomy and deep learning outcomes.

7. Conclusion

This study contributes to the literature on teaching quality and teacher education by empirically validating the Teaching and Learning Quality construct based on Standard 4 of MEQSw2 using Confirmatory Factor Analysis. While the measurement model demonstrates strong construct validity and reliability, the findings reveal a critical pedagogical imbalance between strong teacher competencies and weak learner agency.

Interpreted through a constructivist lens, the results indicate that teaching practices are predominantly characterised by instructional control, procedural planning, and systematic assessment, while opportunities for active learning, problem-solving, and real-world application remain limited. This misalignment challenges the assumption that strengthening teacher performance alone will automatically lead to constructivist learning outcomes.

The study underscores the need to reconceptualise teaching quality as a relational and epistemic construct that encompasses both teacher professionalism and learner participation. For teacher education, the findings highlight the urgency of preparing teachers not only as competent instructors but as designers of learning environments that empower students as active knowledge constructors.

By situating teaching quality within constructivist theory and teacher education discourse, this study offers both empirical and theoretical contributions to international scholarship. It calls for a reorientation of teacher education, professional development, and policy frameworks towards pedagogical practices that balance structure with autonomy, thereby fostering meaningful and sustainable learning in contemporary classrooms.

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